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10/663,964	09/16/2003	Glenn M. Boles	Boles 3-4-30	2670
47394	7590	10/30/2008	EXAMINER	
HITT GAINES, PC			MERED, HABTE	
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RICHARDSON, TX 75083			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/663,964	Applicant(s) BOLES ET AL.	
	Examiner HABTE MERED	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The amendment filed on 7/18/2008 has been entered and fully considered.
2. Claims 1-14 and 21-26 are pending in the instant Application. Claims 1, 8, and 21 are the base independent claims. Claims 1, 5, 6, 8, and 21 are amended.

Response to Arguments

3. Applicant's arguments with respect to all independent claims have been considered but are moot in view of the new ground(s) of rejection and in view of the fact that the current amendments to all the independent claims have changed the scopes of these claims. Clearly as detailed in the rejection below the newly found prior art of Lau et al anticipates all the base independent claims.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 21 and 24-26** are rejected under 35 U.S.C. 102(b) as being anticipated by Lau et al.

Regarding **claim 1**, Lau'069 discloses a process for transmission of a message in a system , the process comprising the steps of sending, receiving, or propagating a sequence of packets (i.e. **Figures 1 and 4 a 100 Base-X PCS stream is shown with a PCS 100 Base-X PCS frame and since the PCS frame is contained in a stream there ought to be a sequence of frames in the stream – see Column 3, Lines 25-**

30 and Column 11, Lines 55-67) having Interpacket gaps there between, each (i.e. each MAC frame and corresponding 100 Base-x PCS frame are enclosed by a pair of interframe gaps as shown in Figures 1 and 4)

packet comprising a start-of-stream delimiter (**See Figure 4 in that each PCS Frame starts with Start Stream Delimiter – SSD**), and a series of at least 16 message bytes encoded in symbols uninterrupted by a control symbol (**i.e. as shown in Figure 4 the data portion contains 46 – 1500 pairs of 5 bit code groups or symbols as discussed in Column 3, Lines 30-35 and further inferred from Column 11, Lines 55-67 – further 4B/5B encoding is used but 8B/10B encoding entails same procedure**), and

wherein one of the Interpacket gaps comprises a plurality of symbols decoded as Idle symbols (**i.e. in Figure 4, the first InterFrame Gap has strictly idle symbols of I**)

wherein the message is encoded in the one of the Interpacket gaps by replacing at least one of the plurality of symbols with non-Idle symbol to form a modified Interpacket gap (**the second interframe gap contains standard Idle symbols like I and non-standard idle symbols as detailed in Column 10, Lines 33-67**),

such that the presence of the non-Idle symbol is part of the message (**i.e. clearly as shown in Figure 4 the non-Idle symbol is part of the PCS stream message**) and the modified Interpacket gap complies with, a packet transmission standard (**as illustrated in Column 7, Lines 55-67 and clearly it states in Column 10, Lines 40-45 it states the idle PCS stream is fully compliant to the 100 Base-T. It should be**

emphasized that Lau'069's teachings as stated in Columns 6 and 10 fully anticipate claim 1).

Regarding **claim 2**, Lau'069 discloses wherein the process comprises a Fast Ethernet **(100 Base-T is Fast Ethernet standard as illustrated in Column 5, Lines 45-50).**

Regarding **claim 3**, Lau'069 discloses a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero **(Table 2 shows the non-idle symbol of zero).**

Regarding **claim 4**, Lau'069 discloses a process wherein the non-idle symbol is a symbol having only one zero bit. **(Table 2 shows the non-idle symbol of zero with a single bit of zero).**

Regarding **claim 5**, Lau'069 discloses a process wherein the non-idle symbol is based on the packet transmission standard **((as illustrated in Column 7, Lines 55-67 and clearly it states in Column 10, Lines 40-45 it states the idle PCS stream is fully compliant to the 100 Base-T or Fast Ethernet).**

Regarding **claim 7**, Lau'069 discloses a process wherein the message comprises a side channel **(i.e. Lau'069 teaches out of band signaling using the interframe gap using non-idle symbols as indicated in Column 1, Lines 36-40 and Column 10, Lines 30-35).**

Regarding **claim 8**, Lau'069 discloses a process for transmission of messages in a system, the process comprising the steps of sending, receiving, or propagating (**See Figures 1 and 4**)

1) more than one packet (**i.e. See Figure 4 describing a PCS stream and has to have more than one PCS frame**) and

2) an interpacket gap (**i.e. interframe gap**), the packet comprising an information-carrying portion including at least 16 information bytes encoded in standard symbols (**i.e. as shown in Figure 4 the data portion contains 46 – 1500 pairs of 5 bit code groups or symbols as discussed in Column 3, Lines 30-35 and further inferred from Column 11, Lines 55-67 – further 4B/5B encoding is used but 8B/10B encoding entails same procedure**) between a start-of-packet delimiter (**i.e. See Start Frame Delimiter – SFD in Figure 4**) and an end-of-packet delimiter (**i.e. See End Frame Delimiter – EFD in Figure 4**), the message encoded in the information-carrying portion by adding including at least one non-standard symbol (**i.e. the data portion of each frame by definition contains non-idle symbols listed in Table 1. However Lau'069 still teaches replacing the idle symbols with non-idle symbols as detailed in Columns 6 and 10**),

wherein the standard symbols are defined according to a packet transmission standard (**as illustrated in Column 7, Lines 55-67 and clearly it states in Column 10, Lines 40-45 it states the idle PCS stream is fully compliant to the 100 Base-T.**)

and the at least one non-standard symbol is classified as unused by said packet transmission standard (**See Table 2 where Symbol W is unused or unassigned but**

can be used as a non-standard symbol as indicated in Column 9, Lines 55-67 and Column 10, Lines 44-48).

Regarding **claim 9**, Lau'069 discloses a process wherein the inter-packet gap includes both at least one symbol decoded as an idle symbol (i.e. I as shown in Figure 4) and at least one non-idle symbol (as shown in Figure 4 where the non-Idle symbols B and D of Table 2 are used as further indicated in Column 10, Lines 40-67 and Column 11, Lines 1-5) such that the presence of the non-idle symbol is part of a message (**i.e. Lau'069 shows in Figure 4 that the non-idle symbols of the IFG are part of the message contained in the stream).**

Regarding **claim 10**, it is noted that the limitations of claim 10 corresponds to that of claim 2 as discussed above, please see the Examiner's comments with respect to claim 2 as set forth in the rejection above.

Regarding **claim 11**, it is noted that the limitations of claim 11 corresponds to that of claim 3 as discussed above, please see the Examiner's comments with respect to claim 3 as set forth in the rejection above.

Regarding **claim 12**, it is noted that the limitations of claim 12 corresponds to that of claim 4 as discussed above, please see the Examiner's comments with respect to claim 4 as set forth in the rejection above.

Regarding **claim 21**, Lau'069 discloses an apparatus (**i.e. data terminal equipment in Figure 2 shown as 12A**), comprising: a transmitter configured to transmit (**i.e. 100 Base –TX shown in Figure 2**) a signal having a plurality of packets

and an interpacket gap (**See Figure 4 showing PCS stream/signal containing interframe gap**), the interpacket gap having a plurality of symbols decoded as an Idle symbol (**see the first interframe gap containing only I standard idle symbols**), the Idle symbol defined according to an Ethernet standard (**See Table 1 based IEEE 802.3 standard**), the transmitter including:

a buffer configured to store a message to be inserted into the interpacket gap (**each of the protocol layers have to have a buffer to process and as shown in Figure 3, the out of band message is inserted in the physical coding sublayer 34 as shown in Column 9, Lines 29-45, Column 13, Lines 35-45, Column 15, Lines 50-55**);

a formatter configured to modify a bit stream representing the message to allow identification of message boundaries and to allow establishment of word alignment within the bit stream (**Since it is shown in Figure 4 the output of DTE 12A aligns PCS bit stream with start and end of frame has to have a formatter entity**) ; and

an encoder configured to substitute at least one for-one of the plurality of symbols decoded as an Idle symbol in the interpacket gap with a non-Idle symbol to form a modified interpacket gap, such that the presence of the non-Idle symbol is to encode at least a portion of the message (**the second interframe gap of Figure 4 contains standard Idle symbols like I and non-standard idle symbols as detailed in Column 10, Lines 33-67 and clearly encoding occurs from a 4-bit mac code group to a 5 bit PCS code group and to perform such encoding Figure's 12A DTE has to have some form of an encoder**), and the modified interpacket gap complies

with the Ethernet standard. **(as illustrated in Column 7, Lines 55-67 and clearly it states in Column 10, Lines 40-45 it states the idle PCS stream is fully compliant to the 100 Base-T.**

Regarding **claim 24**, Lau'069 discloses an apparatus wherein the Ethernet standard is IEEE 802.3. **(See Lau'069 Column 1, Lines 59-67 and Column 7, Lines 60-67)**

Regarding **claim 25**, Lau'069 discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 1. **(See Lau'069 Table 1 shows the symbol logic 1 encoded as "01001")**

Regarding **claim 26**, Lau'069 discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 0. **(See Lau'069 Tables 1 and 2 where logic or symbol 0 is encoded as "11110")**

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 6, 13, and 14 are** rejected under 35 U.S.C. 103(a) as being unpatentable over Lau'069 in view of Song et al (US 2003/0137975 A1).

Regarding **Claim 6**, Lau'069 fails to disclose a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence.

However, the above mentioned claimed limitations are well known in the art as evidenced by Song'975. Song'975 discloses a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence **(Song'975 in Paragraph 70 discloses a non-idle symbol comprising a K28.5/Dxx.y or K28.1/Dxx.y sequence)**.

In view of the above, having the process based on Lau'069's system and then given the well established teaching of Song'975, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the process based on Lau'069's system as taught by Song'975 in order to comply to ANSI T11 standard for inter-frame gap while being able to send message using side channel or out-of-band signaling.

Regarding **claim 13**, Lau'069 fails to disclose a process wherein the system comprises Gigabit Ethernet.

However, the above mentioned claimed limitations are well known in the art as evidenced by Song'975. Song'975 discloses a process wherein the system comprises Gigabit Ethernet **(See in Figure 7A and paragraph 115 it is disclosed a system based on Gigabit Ethernet)**.

In view of the above, having the process based on Lau'069's system and then given the well established teaching of Song'975, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the

process based on Lau'069's system as taught by Song'975 in order to comply to IEEE 802.3 standard as it is the industry standard for Ethernet traffic.

Regarding **claim 14**, it is noted that the limitations of claim 14 corresponds to that of claim 6 as discussed above, please see the Examiner's comments with respect to claim 6 as set forth in the rejection above.

7. **Claims 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lau'069 in view of Thi et al (US Pub. No. 2002/0061012 A1).

Regarding **claim 22**, Lau'069 fails to disclose an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag.

However, the above mentioned claimed limitations are well known in the art as evidenced by Thi'012. Thi'012 discloses an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag (**See Paragraphs 434 and 435**).

In view of the above, having the apparatus based on Lau'069 and then given the well established teaching of Thi'012, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the apparatus based on Lau'069 as taught by Thi'012, since Thi'012 clearly states in paragraph 434 that such a technique of using HDLC flag allows incorporation of new services such as fax.

Regarding **claim 23**, the combination of Lau'069 and Thi'012 discloses an apparatus wherein the formatter is configured to insert a logic zero to the bit stream to

avoid recognition of a portion of the message as the flag. **(See Lau'069 Table 2 entering logic 0 to avoid detection in interframe gap)**

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2416

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Habte Mered/
Examiner, Art Unit 2416

/Aung S. Moe/

Supervisory Patent Examiner, Art Unit 2416